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Some of the water in the sediment pond will be used for fugitive dust control. However, during storm events more water will be generated, necessitating discharge. There are no other facilities on site (such as a preparation plant) that will require a raw water source. On a dry day dust suppression would use only about 15,000 gallons. Also during reclamation and hydro seediing 10,000 gallons of water will be used per day. But since this is only a small mine site this will only be needed for two to three days. The mine site drainage and pond location were designed to disturb the smallest watershed possible. With this design the pond will only discharge during rainfall events of sufficient size to saturate the small drainage area, and fill the pond beyond the discharge point. This Mine Site, Stockpile Area and Pond locaions are currently disturbed (7.46 acres) but with no existing sediment control.

The discharge from this area will be 104.89 cubic feet per second for a peak storm. In order to recycle this water and because we cannot control mother nature, tanks of sufficient size would have to be installed to hold this water over week ends or other times when dust control (our only need for recycling storm water) was not necessary. The amount of water to be held would then be 104.89 cubic feet per second X 60 seconds per minute X 60 minutes per hour X 24 hours for one day = 9,062,496 cubic feet per day. This would then be 9,062,496 cubic feet of water X 7.48 gallons per cubic feet = 67,787,470 gallons for one day and one 25 year – 24 hour storm event. So most water tanks (or if stored in septic tanks) are 1,000 gallons. It would take 67,787,470 gallons / 1000 gallons per tank = 67,787 tanks per storm day. At a cost of purchasing and installing each tank of $500.00 per tank this cost would be 67,787 X $500 = $33,893,500 dollars. This would only be the cost of storing the water additional cost would be incurred when pumping this water out to use for dust control. And if these men were on vacation during a rainy week then this

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option would have to be increased for this situation. This same cost would apply to septic tanks if used for subsurface disposal along with the additional cost of drain fields and drain field installation. However if a heavy rain comes at a time when additional rain (runoff) is currently stored (worst case) this sizing would have to be increased. A pond constructed to hold this one day storm without discharge, would have to hold 9,062,496 cubic feet / 43,560 square feet per acre = 208 acre feet (An MSHA – High Hazard Impoundment). This size facility would put residents and travelers down stream below this location at unnecessary risk and also incur costs of MSHA approval and construction. This would also disturb additional area: 9,062,496 cu.ft. / 50 ft deep = 181,249.9 sq.ft. = 4.16 acres of additional disturbance. The cost for the engineering design ($100,000), construction ($900,000), maintenance ($600,000) & reclamation ($400,000) would come to approximately $2,000,000.

As previously stated water conservation practices will be undertaken and the drainage entering the pond will be recycled and used for dust control, both on roads and in the underground mine and for all hydro seeding and plant watering that is possible. This water will be used for all water necessary except for drinking to insure the least amount of discharge water is generated.

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The proposed mining operation falls under 405 KAR 1:200, Section 1(2) which precludes any type of treatment other than sediment ponds for disturbed areas greater than 1 acre, 405 KAR 16:060, Section 2 & 405 KAR 16:070. However as shown previously alternative treatment or discharge to alternative treatment has been investigated. Straw bales and silt fences were also investigated but these methods are for very small areas and do not control sediment as effectively as settling ponds. However these will be used as needed in addition to the sediment pond proposed.

Alternate processes and treatment have previously been discussed but this attachment will deal with additional ones so all known options are evaluated. First we will consider pumping this discharge into abandoned mines. This process is extremely expensive and requires approval from MSHA and the EPA. The underground mines in this area that have the capacity to store water are currently full to their storage point. Additional pumping of water into any mine will simply displace water and still create a discharge. Secondly applying additional water pressure to old mines that were mined with out leaving an outcrop barrier would be hazardous and would create a potential of a mine blowout. Another option would be to inject the discharge into subsurface areas that do not have underground mines. This option is not valid for this area because mining has occurred in all seams from the Harlan Seam up to and including the Wallins Creek and Smith coal seam in and around this area for miles. For this reason the same factors and costs as discussed for alternate discharge points would apply to this analysis. Water would have to be pumped for miles to a suitable location. In addition to the collection and pumping cost, many additional costs would be added. These included Subsurface investigation, Percolation

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testing, Installation of ground water well networks, Determination of depth to ground water and seasonal variations, Ground water analysis to evaluate the response of the water table to hydraulic loading beneath absorption fields, and Assessments of ground water quality and potential impacts from subsurface wastewater disposal. The construction of a waste water treatment plant was also evaluated. The cost of plant construction would be over 1,000,000 dollars. Plant operators, pumping and dismantling would also add additional costs. A plant operator over a 20 year period would cost 40,000 dollars per year x 20 years = $ 800,000. Construction of other sediment control facilities would also not meet the regulations for underground mine sites. This proposal is for an underground mine, if this seam were mined by surface mining methods, additional drainage areas and discharges would occur.

Pumping of water from this pond for discharge is not proposed under this permit. And in no instance will water be pumped from the pond for discharge when the receiving streams flow is equal to or less than 0.1 cubic feet per second(cfs). The only pumping from this pond that is proposed will be to recycle the water for dust control, seeding or any other uses that will not create a discharge.